PRODUCT INFORMATION



Amifostine thiol (hydrochloride)

Item No. 18612

CAS Registry No.:	14653-77-1	
Formal Name:	2-[(3-aminopropyl)amino]-	
	ethanethiol, dihydrochloride	
Synonym:	WR 1065	∧ ∧ ∧ ,SH
MF:	C ₅ H ₁₄ N ₂ S ● 2HCl	H ₂ N N
FW:	207.2	 H • 2HCI
Purity:	≥90%	
Supplied as:	A crystalline solid	
Storage:	-20°C	
Stability:	≥4 years	
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.		

Laboratory Procedures

Amifostine thiol (hydrochloride) is supplied as a crystalline solid. Aqueous solutions of amifostine thiol (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of amifostine thiol (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Amifostine thiol is a radioprotective agent and an active metabolite of amifostine (Item No. 14398).¹ It is formed from amifostine by plasma membrane-bound alkaline phosphatase. Amifostine thiol scavenges ABTS (Item No. 27317) radicals in a cell-free assay.⁷ It prevents single- and double-stranded DNA breaks induced by γ -radiation, as well as inhibits γ -radiation-induced mutations at the hypoxanthine-guanine phosphoribosyl transferase (HGPRT) locus in V79-B310H lung fibroblast cells when used at a concentration of 4 mM.²⁻⁴ Amifostine thiol also reduces *cis*-DDP-induced mutations at the HGPRT locus in V79-B310H cells.⁵ It increases survival, reduces the loss of bone marrow progenitor cells, and inhibits decreases in intestinal collagen thickness and crypt and Paneth cell density in mice exposed to total body γ -irradiation when administered at a dose of 500 mg/kg prior to irradiation.⁶

References

- 1. Shaw, L.M., Bonner, H., and Lieberman, R. Pharmacokinetic profile of amifostine. Semin. Oncol. 23(4 Suppl 8), 18-22 (1996).
- 2. Grdina, D.J. and Nagy, B. The effect of 2-[(aminopropyl)amino] ethanethiol (WR1065) on radiationinduced DNA damage and repair and cell progression in V79 cells. Br. J. Cancer 54(6), 933-941 (1986).
- 3. Sigdestad, C.P., Treacy, S.H., Knapp, L.A., et al. The effect of 2-[(aminopropyl)amino] ethanethiol (WR-1065) on radiation induced DNA double strand damage and repair in V79 cells. Br. J. Cancer 55(5), 477-482 (1987).
- 4. Grdina, D.J., Nagy, B., Hill, C.K., et al. The radioprotector WR1065 reduces radiation-induced mutations at the hypoxanthine-guanine phosphoribosyl transferase locus in V79 cells. Carcinogenesis 6(6), 929-931 (1985).
- 5. Nagy, B., Dale, P.J., and Grdina, D.J. Protection against cis-diamminedichloroplatinum cytotoxicity and mutagenicity in V79 cells by 2-[(aminopropyl)amino]ethanethiol. Cancer Res. 46(3), 1132-1135 (1986).
- Pamujula, S., Kishore, V., Rider, B., et al. Radioprotection in mice following oral administration of WR-1065/ PLGA nanoparticles. Int. J. Radiat. Biol. 84(11), 900-908 (2008).
- 7. Walker, R.B. and Everette, J.D. Comparative reaction rates of various antioxidants with ABTS radical cation. J. Agric. Food Chem. 57(4), 1156-1161 (2009).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFFTY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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